

EXHIBIT 1

**DECLARATION OF
ORLEY ASHENFELTER
IN CONNECTION WITH**

COLON et al.

v.

**NATIONAL COLLEGIATE ATHLETIC ASSOCIATION
CASE NO. 1:23-cv-00425-WBS-KJ**

January 31, 2025

ATTORNEYS' EYES ONLY

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I. Introduction

1. I am the Joseph Douglas Green 1895 Professor of Economics Emeritus at Princeton University. I have been retained by counsel for a proposed class of coaches in certain National Collegiate Athletics Association (“NCAA”) Division I sports at member schools. By agreement of those schools, and as expressed in a governing NCAA bylaw, these coaches were prohibited from being paid for providing coaching services to those schools. Plaintiffs contend that this NCAA bylaw (enacted in the early 1990’s and withdrawn effective July 1, 2023) constituted an illegal wage fixing conspiracy to suppress the wages of thousands of Division I NCAA assistant coaches to zero dollars (“the alleged conspiracy”). The proposed class is defined as follows:

All persons who, from March 17, 2019, to June 30, 2023, worked for an NCAA Division I sports program other than baseball in the position of “volunteer coach,” as designated by NCAA Bylaws.¹

2. I previously submitted a report in connection with this case addressing the following questions:

- i. Whether common evidence exists that all or nearly all members of the proposed class have been harmed as a result of the alleged conspiracy.
- ii. Whether one or more accepted and feasible methods exist for estimating monetary damages incurred by the proposed class members on a class-wide

¹ Notice of Motion and Motion for Class Certification Case 1: 23-cv-00425-WBS-CSK Document 85 at P. 2.

basis and whether sufficient data are available to implement these methods.²

3. I have been asked by counsel for the Plaintiffs to review and comment on the expert report and deposition testimony of Dr. Jee-Yeon K. Lehmann, submitted on behalf of the NCAA, and with respect to certain related contentions asserted in NCAA's "Opposition to Smart and Colon Plaintiffs' Motions for Class Certification" and NCAA's "Motion to Exclude Expert Testimony of Dr. Orley Ashenfelter and Dr. Daniel Rascher On Class Certification," both of which rely on the Lehmann Report.³

4. In this report, I present my comments on and responses to the Lehmann Report. Nothing in the Lehmann Report causes me to change my opinions offered in my original report. As described in that report, based on my review of documentary and empirical evidence as well as economic analysis, I conclude that, with respect to the NCAA's bylaw fixing the compensation of certain Division I coaches at \$0:

² Report of Orley Ashenfelter in Connection with *Colon et al., v. National Collegiate Athletic Association*, Case No. 1:23-cv-00425-WBS, November 1, 2024, Corrected November 26, 2024 ("my original report" or "Ashenfelter Report") at ¶ 4. My education, qualification, and experience are described in my original report at ¶ 1. As described in my original report, the proposed class excludes those individuals who coached baseball, basketball, or FBS (bowl subdivision) football. Baseball coaches are the proposed class in *Smart v. NCAA*, Case No. 2:22-cv-02125. NCAA Division I Basketball and FBS football programs did not have restrictions on how much they could pay their coaches. See Ashenfelter Report at ¶ 16 and fn 12.

³ Expert Report of Jee-Yeon K. Lehmann, Ph.D. December 20, 2024. ("Lehmann Report"). *Deposition of Jee-Yeon K. Lehmann, Ph.D.*, January 22, 2025 ("Lehmann Deposition"). The Lehmann Report is a response to both my report and the report of Daniel Rascher (Amended Expert Declaration of Daniel A. Rascher in Support of Motion for Class Certification, *Taylor Smart et al. v. NCAA, 22-cv-021250WBS-CSK* ("Rascher Report")). I do not have any opinions on the Rascher Report, nor on the portion of the Lehmann Report that is specifically directed at the Rascher Report (Lehmann Report at Section VII) nor on any of the assertions made by NCAA with respect to the Rascher Report.

- There exists evidence common to the class that the alleged conspiracy suppressed class members' compensation generally, namely at zero, and that this alleged conspiracy affected all or nearly all members of the class,⁴
- NCAA Division I member schools had sufficient market power to suppress the compensation of the coaches who were subject to the alleged conspiracy, as evidenced by the effective suppression of their compensation to below the competitive level (namely, to \$0),⁵ and
- There exists a reasonable methodology by which to estimate damages using data and methods that are common to the class.⁶

5. I base these opinions, in part, on an analysis of the first year following the NCAA's revocation of the rule that prevented Division I member schools from compensating class members, effectively fixing their wages at \$0. As I described in my original report, I do not expect the effect of this rule change to be immediate for several reasons, namely (i) that wages in general do not immediately adjust to market changes, a phenomenon known as "wage rigidity";⁷ (ii) that adjusting University budgets is a slow process that I do not expect to be able to respond immediately to the end of a thirty-year conspiracy to suppress certain workers' wages;⁸ and (iii) due to the lingering effects of residual collusion which are understood by economists to

⁴ Ashenfelter Report at ¶ 8

⁵ Ashenfelter Report at ¶ 9.

⁶ Ashenfelter Report at ¶ 10.

⁷ Ashenfelter Report at ¶¶ 43-44.

⁸ Ashenfelter Report at ¶¶ 45-49.

potentially last long after a cartel agreement has been dissolved.⁹ Though I believe that the market is still moving toward equilibrium as described above, data on post-conspiracy hiring and compensation of positions that were previously uncompensated per the NCAA's rules provide a conservative yet reasonable benchmark for estimating the compensation that would have been earned by class members but-for the alleged conspiracy. Over 99% of so-called "countable coaches" whose compensation was not restricted by the wage-fixing agreement at issue in this case were in fact paid. This is evidence that in the absence of a rule preventing the compensation of NCAA Division I coaches, they do, in fact, nearly universally receive compensation, while the wage fixing conspiracy alleged in this case had the effect of reducing the compensation of all or nearly all class members to below the competitive level, namely, to \$0.

6. Using data that are available classwide, and methods that use both classwide information and information that is tailored to each school/sport/year and class member, I propose a method based on evidence common to the class which provides a reasonable, conservative estimate of damages for the class as a whole. My proposed method is similar to that

⁹ Ashenfelter Report at ¶¶ 50-51. I additionally note that since filing my original report, I have seen evidence of coordination across universities on coach compensation.

Similarly, BigWest_00007787 reflects planning for an athletics director meeting in the Big West conference. This document includes an email from an athletics director at Long Beach State, requesting "to add the 'Impact of NCAA legislative item 2022-28 Elimination of Volunteer Coach Designation.' I'd like to know how the other conference schools are planning to deal with this and the potential cost of adding volunteer coaches to the payroll.")

used by the Plaintiffs' expert Dr. Robert Tollison in a previous wage fixing case brought by certain NCAA Division I coaches against the NCAA.¹⁰

7. Dr. Lehmann argues that any analysis of harm to members of the class must be an individualized inquiry that accounts for “school-, sport-, program-, and coach-specific factors.”¹¹ I do not disagree. However, contrary to Dr. Lehmann's assertions, evidence common to the class is capable of showing that the alleged conspiracy at issue in this case, which fixed wages of class members to \$0, suppressed the compensation paid to all or nearly all class members.¹² Furthermore, the method of calculating damages proposed in my original report and described again below, which is based on making adjustments to the actual pay received by benchmark coaches in the same school, sport, and year as each individual class member, does account for the factors suggested by Dr. Lehmann.

8. Dr. Lehmann states that I “assume[] rather than prove[] that, in the absence of the challenged bylaw, (i) all programs that had a volunteer coach would have replaced that position with a paid one and (ii) all members of the *Colon* proposed Class would have been hired to fill the additional paid positions.”¹³ This is incorrect. I did not “assume” either thing, because neither is relevant. The relevant issue to an economist is whether the competitive price for the coaching

¹⁰ I describe the analysis performed by Dr. Tollison at greater detail at fn 41, below.

¹¹ Lehmann Report at ¶ 18. I note that, as acknowledged by Dr. Lehmann at her deposition, a “program” refers to a sport-school combination, so “program” is redundant of school and sport (Lehmann Deposition at 82:13-17).

¹² The class members who may not have suffered monetary harm—the difference between “all” and “nearly all”—are the extremely small number of volunteer coaches who worked in a program in which one of the payable coaches did not receive compensation. In that case, applying any stepdown percentage to a benchmark salary of \$0 would yield a but-for pay estimate of \$0. I do not opine on whether those coaches may have experienced non-monetary harms. These coaches are easily identifiable in the subpoena data I have received.

¹³ Lehmann Report at ¶ 19.i.

services that class members provided would have been higher than the fixed price, namely \$0, in the absence of the alleged conspiracy. As described in my previous report, I conclude that the answer is yes. Likewise, I do not have to consider whether any class member or someone else would have been hired but-for the alleged conspiracy suppressing coach compensation. Each class member was hired as a coach and worked as a coach during the class period.¹⁴ During her deposition, Dr. Lehmann agreed that every class member was hired and worked as a volunteer coach.¹⁵ Each class member was harmed because he or she provided labor and, as a result of the wage-fixing conspiracy, was paid less for that labor than he or she would have received in the absence of a rule fixing their compensation at zero. I do not need to consider any further hypotheticals to reach the conclusion that all or nearly all members of the proposed class were injured by the \$0 wage fix.

II. Data Updates

9. The analyses in my previous report were based largely on two data sources: the NCAA's Membership Financial Reporting System ("MFRS") for academic years 2015-16 through 2022-23, and data produced by colleges and universities with Division I athletics programs in response to Plaintiffs' subpoenas.¹⁶ The MFRS data currently available to me

¹⁴ I am informed that the Court has ruled with respect to this question that: "Because plaintiffs were all hired as volunteer coaches, the issue here is whether they would have been paid, not whether they would have been hired." Mem. and Order re: Def.'s Mot. to Transfer and Mot. to Dismiss ("MTD Order") at 20, ECF No. 38, at 13 n.5. I am not offering a legal opinion, but from an economic perspective, I agree that this is the relevant question to ask when assessing whether the person subject to the wage fix was injured and, if so, by how much. In the wage fixing cases I have worked on prior to this one, it has never been necessary to show that in the absence of an alleged wage-fix or other similar conduct that suppresses wages relative to competitive wages, that the class members subject to such a conspiracy (and not someone else), would have been in the position in the but-for world.

¹⁵ Lehmann Deposition at 84:8-16.

¹⁶ See ¶ 64 of my original report for details on the MFRS, and ¶¶ 61-63 for details on the college subpoena data. As noted above, the MFRS data available to date do not include any post-conspiracy

include only the period of the alleged conspiracy and do not include any post-conspiracy period data. I have been informed by counsel for the Plaintiffs that updated MFRS data (covering the 2023-24 academic year, i.e. the first academic year after the end of the alleged conspiracy) have been provided by NCAA Division I member schools to the NCAA but have not yet been produced to the Plaintiffs. The data produced by colleges and universities pursuant to the Plaintiffs' subpoenas are still being produced to the parties in this case on a rolling basis. These data include, for most schools, information on all or part of the 2023-24 academic year, the first academic year following the end of the alleged conspiracy.

10. Since the filing of my original report, I have continued to process and include data from additional schools, including those which were provided to me too late to be processed in time to be included in my original report. Unless otherwise noted, all of the analyses described in this report are based on these updated data.¹⁷

11. As of the filing of my original report, I had received and processed data for 243 schools.¹⁸ The school data are generally provided for academic year 2018-19 through some portion of the 2023-24 academic year. As of the date of this report, I have received and processed data from 330 schools. Of these, 301 schools have provided data from the post-conspiracy period sufficient to identify whether a program has expanded its paid coaching staff beyond the caps on the number of unrestricted coaches present during the conspiracy period, of

period data. MFRS data from the 2023-24 academic year have not been provided to me as of the date of this report.

¹⁷ The data production process is ongoing and I reserve the right to continue to update my analyses as more data become available to me.

¹⁸ Ashenfelter Report at ¶ 61. As described in my original report, these data require cleaning and processing (*see* Ashenfelter Report at fn 99). This data processing includes evaluation of the material submitted by each school, and commonly requires various types and levels of follow-up with the schools that submitted these data.

which I identify 172 schools as having expanded the coaching staff of at least one program.¹⁹

Not all schools have provided data on the salary paid to its coaches. I have received and processed data from 183 schools that (i) have reported post-conspiracy period data, and (ii) reported salary for at least some coaches.²⁰ Of these schools, 105 provided sufficient data to identify at least one program that expanded its paid coaching staff beyond the caps on the number of unrestricted coaches present during the conspiracy period and hence can be included in the regression analysis described in my previous report. Unless otherwise specified, the results described in this report are based on these updated data.

12. Table 1 presents summary statistics for the data provided as a part of this process.²¹ In particular, this table presents for each sport program, the number of person-years worked by unrestricted coaches, the number of person-years worked by individuals subject to the Volunteer Coach Rule, the number of school-years offering that program, the number of unique schools offering that program, and the mean salary of head- and unrestricted assistant coaches. I present this information separately for each sport and overall across all sports.

¹⁹ I identify a coach as being “compensated” if either (i) they have a positive value for any of the following variables: salary, compensation, health insurance, or tuition assistance or (ii) the school reported the coach as working in a given year, but for all or nearly all employees did not report sufficiently detailed compensation information to identify their compensation in that year.

²⁰ In particular, this requires that each program reports the salary earned by each coach in a given year. Some schools are excluded from this analysis because they did not produce information on coaches’ salaries, or because they produced a single salary that spans multiple years. Such schools may be included in the group of schools with at least one expanded program, even if they are not included in my regression. Additionally, as described in Section IV.A below, some of the analyses in this report include coaches’ ages. The count of schools in this paragraph does not require that they have provided age data for their coaches.

²¹ This Table is meant to be parallel to Table 4 from my original report. Tables 1-3, which were based on MFRS data, did not change, so I do not present updated versions here.

Table 1: Summary Statistics (2019-2024)

Sport	Countable Coach Years	Volunteer Coach Years	Program- Years	Programs	Mean Head Coach Salary	Mean Assistant Coach Salary
M. Cross Country	4	3	4	1	\$39,500	
M. Football	6,340	257	483	91	\$384,855	\$87,054
M. Golf	1,722	331	973	191	\$95,126	\$45,124
M. Gymnastics	150	21	50	10	\$109,157	\$59,814
M. Ice Hockey	748	157	219	45	\$220,426	\$92,640
M. Lacrosse	1,111	264	341	66	\$143,638	\$62,694
M. Skiing	10	2	5	1	\$70,308	
M. Soccer	2,843	655	907	173	\$101,718	\$43,764
M. Swimming	32	8	11	2	\$131,894	\$13,650
M. Swimming & Diving	148	50	54	12	\$104,132	\$63,058
M. Tennis	1,395	399	720	141	\$95,154	\$50,303
M. Track & Field	19	19	6	1	\$75,420	\$45,704
M. Track (Indoor & Outdoor) & Cross Country	247	91	91	19	\$80,883	\$58,275
M. Volleyball	264	69	104	21	\$76,522	\$45,579
M. Water Polo	95	20	41	9	\$87,026	\$44,259
M. Wrestling	981	234	318	71	\$125,096	\$65,587
W. Acrobatics and Tumbling	36	1	12	4	\$88,756	\$34,242
W. Beach Volleyball	403	155	189	41	\$68,152	\$40,381
W. Bowling	207	46	152	29	\$51,730	\$28,986
W. Cross Country	10	4	6	1	\$41,173	
W. Equestrian	145	13	60	11	\$77,609	\$51,776
W. Fencing	19	4	7	2	\$78,389	\$50,203
W. Field Hockey	951	145	319	63	\$91,556	\$45,263
W. Golf	1,547	242	860	171	\$84,234	\$43,248
W. Gymnastics	773	138	237	48	\$120,765	\$69,255
W. Ice Hockey	420	67	125	26	\$118,323	\$56,592
W. Lacrosse	1,545	165	487	98	\$91,846	\$47,254
W. Rowing	1,437	260	354	69	\$94,836	\$44,687
W. Rugby	96	11	40	9	\$72,479	\$41,534
W. Skiing	10	3	5	1	\$85,207	
W. Soccer	4,222	760	1,339	260	\$96,508	\$45,820
W. Softball	4,264	655	1,300	248	\$105,618	\$50,895
W. Swimming	201	30	84	16	\$78,846	\$21,633
W. Swimming & Diving	756	168	230	47	\$87,106	\$42,568
W. Tennis	1,844	546	990	197	\$82,259	\$42,607
W. Track & Field	77	59	21	4	\$96,238	\$55,299
W. Track (Indoor & Outdoor) & Cross Country	446	187	140	28	\$79,975	\$52,693
W. Triathlon	56	21	33	8	\$49,913	\$10,449
W. Volleyball	4,240	717	1,321	277	\$111,580	\$48,519
W. Water Polo	217	37	91	18	\$79,437	\$42,359
W. Wrestling	17	2	10	3	\$77,965	\$76,125
Rifle	147	28	95	18	\$73,169	\$50,444
C. Cross Country	78	9	38	7	\$60,799	\$26,771
C. Fencing	200	73	72	14	\$75,855	\$42,462
C. Golf	162	16	81	16	\$59,262	\$29,452
C. Skiing	130	24	36	8	\$66,729	\$27,778
C. Swimming	299	29	86	16	\$53,954	\$25,270
C. Swimming & Diving	1,559	339	309	60	\$120,166	\$47,017
C. Tennis	323	56	148	33	\$53,820	\$23,657
C. Track & Field	1,082	359	211	42	\$149,317	\$59,336
C. Track (Indoor & Outdoor) & Cross Country	3,990	1,366	792	150	\$94,197	\$48,493
C. Water Polo	33	18	17	4	\$38,155	\$23,731
ALL	48,051	9,333	14,624	2,901	\$112,807	\$56,158

Source: College Subpoena Data

13. Based on my analysis of the schools from which I have received and processed data to date, there were approximately 5,665 individuals subject to the Volunteer Coach Rule (excluding those individuals who were exclusively engaged in coaching baseball) from March 17, 2019 through July 1, 2023. If I extrapolate this to the remainder of the NCAA Division I programs, I estimate that there were approximately 6,590 individuals subject to the Volunteer Coach Rule during the same period.

14. These additional data affect some of the analyses and results presented by Dr. Lehmann. In the remainder of this section, I present and discuss these results.

15. Dr. Lehmann presents as Exhibit 2 to her report, the “share of programs that did not replace volunteer position with a paid position in AY 2023-24.”²² Exhibit 2 is a chart representing the proportion of programs within each sport (or within a catchall “Other Sports” category)²³ that “did not replace a volunteer with a paid position.” This is defined as programs that “(i) continued to hire at least one volunteer coach in AY 2023-24 and/or (ii) did not have more countable coaches in AY 2023-24.” Dr. Lehmann’s analysis excludes any sport that allowed more than a single volunteer coach during the period of the alleged conspiracy, and therefore excludes several sports, namely football, equestrian, and rowing, as well as all combined programs, which include the majority of Swimming & Diving and Track & Field programs.²⁴ Based on my current data build, I find that in the first academic year since the end of

²² See title to Lehmann Report at Exhibit 2.

²³ These “Other Sports” are sports with “fewer than 10 programs in AY 2022-23: M. Gymnastics, M. Rifle, M. Track & Field, M. Volleyball, M. Water Polo, M. Wrestling, W. Bowling, W. Cross Country, W. Ice Hockey, W. Rugby, W. Swimming, [and] W. Track & Field.” (Lehmann Report at Exhibit 2, Note 4).

²⁴ Throughout this report, “Football” refers to Football Championship Subdivision (“FCS”) football. Football Bowl Championships (“FBS”) Football did not and does not have a volunteer coach position and hence is not an issue in the case. See Ashenfelter Report at fn 30. “Combined” programs refer to sports

the rule preventing compensation of class members, approximately 39% of former volunteer positions have been replaced with a paid position since the end of the alleged conspiracy.^{25,26}

16. Dr. Lehmann presents as Exhibit 3 to her report “the share of programs that hired fewer than the maximum permitted paid coaches in AY 2022-23.” As with Exhibit 2, this is presented separately for each sport (as above, combining some sports into an “other sports”).

17. Based on my current data build, and a refinement of the number of coaches allowed for each rowing program,²⁷ I find that 18% of programs with volunteer coaches had fewer than the maximum number of paid coaches allowed under the NCAA’s rules during the final year of the conspiracy period (academic year 2022-23).²⁸

programs in which all coaching staff in the same sport are combined in practice or competition with both the men’s and women’s teams on a daily basis. *See* Ashenfelter Report at fn 102.

²⁵ I note again that for reasons outlined in Section III.C of my original report, the market for NCAA Division I coaches is in flux and has not yet reached its new equilibrium following the end of the rule prohibiting compensating class members.

²⁶ This is an increase from the 37% reported by Dr. Lehmann (*see* Lehmann Report at Exhibit 2, row “Total”).

²⁷ During the conspiracy period, the general coach cap for women’s rowing was 4 unrestricted coaches and four volunteer coaches (*see* NCAA_SMART-COLON_0000001 NCAA Division I Manual 2020-21 at 11.7.6 and 11.7.6.2.3.1). However, there was an “exception for lightweight rowing,” which allowed “institution[s] that conduct[] a rowing program that includes heavyweight rowing and lightweight rowing” to employ “two additional [unrestricted] coaches.” (*See* NCAA_SMART-COLON_0000001 NCAA Division I Manual 2020-21 at 11.7.6.2.6). In my original report, I made the conservative assumption that all rowing programs were eligible for the “lightweight rowing exception” and were therefore allowed six unrestricted coaches in the conspiracy period, or nine coaches in the post-conspiracy period. (*See* Ashenfelter Report at ¶ 66 and fn 105). Since filing my original report, I have undertaken a review of programs’ websites to identify those eligible for the lightweight rowing exception. These programs are Boston University, Georgetown University, Harvard University, Massachusetts Institute of Technology, Princeton University, Stanford University, and University of Wisconsin, Madison, and they have a conspiracy-era cap of six unrestricted coaches, and a post-conspiracy cap of nine coaches. All other rowing programs are not eligible for the lightweight rowing exclusion, and have caps of four and seven, respectively, for the conspiracy- and post-conspiracy periods.

²⁸ This is a decrease from the 20% reported by Dr. Lehmann (*see* Lehmann Report at Exhibit 3, row “Total”).

18. When a school decides whether to employ the full complement of coaches, it does so within the context of its competitive environment. That is, a program may be allowed to have four coaches but choose to hire only three coaches, believing that they can be competitive with three coaches, *given that all of their rival schools have at most four coaches*. But if the cap increases to five, then the program that formerly had three coaches may no longer feel competitive with three, given that their rivals now may have five coaches. Indeed, analysis of the college subpoena data shows 42% of programs without a full complement of coaches in the 2022-23 period hired at least one additional paid coach in the first year of the post-conspiracy period, indicating that the repeal of the rule prohibiting compensating certain coaches was associated with an increase in hiring paid coaches, even among programs that did not employ a full complement of paid coaches during the conspiracy period.²⁹

19. Related to her assertion that not all programs would have hired paid coaches in the absence of the Volunteer Coach Rule, Dr. Lehmann presents, in Exhibit 6, a series of line graphs that represent changes in total program expenditure for selected sports and conferences, separately for each school, and indexed to the 2018-19 academic year. She describes these charts as showing that “[e]xpenditures in these sports at these schools...varied over time,” from which she concludes that “individual programs’ budget constraints and their ability to fund coach salaries and benefits vary across each other and across time”³⁰ and because of this, “programs’ decisions regarding how many paid coaches to hire will vary across programs and across time.” This Exhibit presents this line chart for Women’s Softball in the Atlantic Coast Conference

²⁹ This is calculated using the same method as Lehmann Exhibit 2, restricted to programs with fewer than the maximum number of coaches in the 2022-23 period. I determine the number of coaches based on college subpoena data.

³⁰ Lehmann Report at ¶ 55.

(Exhibit 6B), and Women's Volleyball in the Mountain West Conference (Exhibit 6C).³¹ While Dr. Lehmann concludes that these charts are evidence that schools may not have hired additional paid coaches in the absence of the rule preventing paying coaches, I note that while overall program expenditure varies, these programs nearly always employed the maximum number of paid coaches allowed under the NCAA's rules, and in the limited years where programs employed fewer than the maximum number of paid coaches, this was associated with greater indexed total program expenditure.³² Among the softball programs presented in Exhibit 6B, the NCAA's MFRS database shows that each of these schools had the maximum allowable number of paid coaches during each year depicted in this graph. Among the volleyball programs presented in Exhibit 6C, this is true for all but two program-years: San Jose State University had one fewer paid coach than allowed by the NCAA's rules in academic year 2019-2020, a year when it had the highest indexed expenditure of the programs in the conference. Similarly, the University of Nevada, Las Vegas had one fewer paid coach than allowed by the NCAA's rules in academic year 2022-23, a year when it had the highest indexed expenditure of the programs in the conference, as well as its highest expenditure of any year.³³ In all other programs in all years for the sports and conferences presented by Dr. Lehmann, though there was variation in total program expenditure, this did not translate to reduced hiring of paid coaches. Additionally, as I

³¹ Exhibit 6A refers to Baseball in Big West Conference, but since Baseball is not a class-relevant sport in this case, I have not examined this chart.

³² In addition to expenses associated with coaching staff, including salaries and benefits, other expenses include but are not limited to: athletic student aid, support staff expenses; recruiting costs; team travel; uniforms and equipment; game-day expenses; marketing costs; athletic facilities costs; and overhead/administrative expenses. See "NCAAFIN_MFRS_SupplementalTool" at tab "TOTALS rev & exp categories".

³³ See my backup materials.

describe further below, my analysis accounts for variations in expenditures on coaching staff, both in terms of pay of coaches and the number of coaches hired.³⁴

III. Regression Analysis and But-For Compensation

20. Before I move to addressing particular criticisms from Dr. Lehmann, it is worth refreshing the reader on how, exactly, the stepdown regression and proposed method of calculating class members' but-for pay work.³⁵

21. My stepdown model is based on the sport programs that, in the year immediately following the rescission of the Volunteer Coach Rule that is at issue in this case, expanded their coaching staff beyond the prior limits on the number of unrestricted coaches during the conspiracy period.³⁶ I choose to focus on these programs because they provide the best currently-available evidence of what a competitive market will look like once it reaches its eventual equilibrium, though it has not yet done so. I note that Dr. Lehmann appears to agree with me that the lingering effects of this conspiracy could last beyond three years.³⁷ As I have explained, the compensation earned by the lowest-paid coaches in the first year after the end of the conspiracy are not equilibrium compensation, but rather are affected by the factors described in Section III.C of my original report, namely the lingering effects of conspiracies, the long time frame necessary to adjust university budgets, and nominal wage rigidity. Because of the length of time that the Volunteer Coach Rule was in place, it is not possible to use compensation data that predates the

³⁴ *see* ¶¶ 23-25 below

³⁵ For more details on the regression analysis, *see* Ashenfelter Report at Section VI.A. For more details on calculating but-for compensation, *see* Ashenfelter Report at Section VI.B.

³⁶ As I discussed in Section III.B of my original report and discuss in ¶ 28 below, I do not expect that the end of volunteer coach rule would lead immediately to all programs to start paying for the newly-compensable position.

³⁷ Lehmann Deposition at 352:1-4.

conspiracy, and as such I must use post-conspiracy data as a reference point for class members' but-for compensation, even though these data are affected by the above-described lingering effects, which almost certainly understate but-for compensation had the Volunteer Coach Rule never been in effect.

22. I have categorized each sport according to how many unrestricted coaches each program is allowed in the period beginning July 1, 2023, according to the NCAA's Division I Bylaws.³⁸ Within each program,³⁹ I rank the coaches from highest to lowest according to their salary. My regression model estimates the relationship (i.e. "stepdown") between two adjacent levels; the stepdown of interest in this analysis is that from the second-lowest compensated coach within each program to the lowest-compensated coach within each program. I focus on the relationship between the lowest- and second-lowest paid coach because the lowest-paid coach has filled the position that was formerly subject to the Volunteer Coach Rule and associated requirement to pay those coaches \$0. The result of this analysis is a series of stepdown coefficients, estimated for each coach cap category, from the pay of the second-lowest to the lowest-paid coach for each program.⁴⁰

23. In order to estimate the but-for compensation of class members, my proposed method takes these stepdowns and applies them to the actual salary earned by the lowest-paid

³⁸ For details on which sports are in which categories, see my original report at ¶ 66. As described in fn 27 above, most rowing programs are subject to a coach cap of 7.

³⁹ "Program" refers to a combination of school-sport-team gender, for instance women's tennis at Southern Methodist University.

⁴⁰ These coefficients were presented in Table 5 of my original report. I note that, where NCAA bylaws increase the permitted number of unrestricted coaches by more than one, and insofar as programs hire more than one coach beyond the previous restriction, my regressions treat all expanded positions as if they were the "lowest paid" position. In such cases, the stepdown is not between the lowest-paid and second-lowest-paid coach, but between expanded positions (which are collectively the lowest-paid positions) and the next-lowest-paid coach.

unrestricted coach in each program in which a class member worked during the class period.

Contrary to Dr. Lehmann's suggestions that my method is not sufficiently precise because it does not account for, e.g., differences in schools or sports, differences in geography or other sources of variation in compensation, my proposed method in fact does account for such differences, because it is based on the actual compensation paid by each program. Throughout her report, Dr. Lehmann conflates my regression analysis, which estimates the relationship between the second-lowest and lowest-paid coach on each team, and my proposed damages analysis, which then applies these stepdowns to compensation paid by each program. This method therefore estimates compensation for each class member in a way that accounts for differences in schools, sports, geographic variation, temporal variation in each school's relative focus on various sports, and other factors that may affect coach compensation.⁴¹

⁴¹ I note that this method is similar to that presented by Dr. Tollison in *Law v. NCAA*. Dr. Tollison used data on coaches salaries' and ages to "construct the earnings relationship in a given sport for a 'clean' period of data...during which the NCAA's compensation restrictions did not apply, between the coach whose position would later become the 'restricted earnings coach' position and the next coach up the ladder in the coaching hierarchy...Controlling for age, I determine for the clean period of data the average relationship between those two coaches' earnings. The estimated wage of the restricted coach in the damages period...is then simply the wage that would place him or her at the predicted percentage of pay of the next coach up the coaching ladder, as derived from the clean period." (Affidavit of Robert D. Tollison, *Law v. National Collegiate Athletic Ass'n*, No. 94-cv-2053 "Tollison Report" at p. 2). Dr. Tollison's hypothetical "move up the ladder" is conceptually similar to my "stepdown" methodology in a few fundamental ways. Dr. Tollison and I both arrange coaches into a hierarchy based on pay, and we then analyze how the pay levels of each rank within that hierarchy are related to one another. Furthermore, we both estimate the pay relationship among ranks by looking outside the alleged conduct period, and then fit that relationship to the conduct period (note that this does not apply to Dr. Tollison's analysis of football and basketball, sports for which he had no data outside of the conduct period). But while Dr. Tollison's analysis can rely on a "clean" pre-conduct period for most sports, my analysis must rely on a post-conduct period that is subject to lingering effects, meaning my estimates of harm may be more conservative. Dr. Tollison also similarly describes the well-accepted problem with lingering effects of the conspiracy tainting salaries in the post-period in a market such as this (which I am constrained to use). (See Tollison Report at § IX).

24. For instance, Dr. Lehmann posits that my method does not “fully capture the dynamics of supply and demand (and thus earnings) in each sport.”⁴² As an example, Dr. Lehmann proposes that potential Division I golf or tennis coaches’ earnings may be affected by jobs at local clubs.⁴³ If it is true that, say, there is a heightened demand for golf coaches because of competition for labor from country clubs such that the compensation of Division I golf coaches increases at some schools, this higher compensation paid to Division I golf coaches would in turn lead my proposed damages model to estimate higher compensation for class members who coached golf at those same schools.

25. As another example, Dr. Lehmann asserts that it was inappropriate for me to analyze data from all NCAA Division I programs in the United States, which she says fails to account for the availability of “alternative coaching alternatives—such as junior colleges, private sports clubs, or high schools” — that may cause regional variation in pay. Again, Dr. Lehmann conflates my regression analysis, which estimates a single nationwide stepdown for each coaching cap group size, with my proposed damages methodology, which captures regional (or other) variation in coach compensation to generate individualized but-for compensation for each class member.⁴⁴ Similar to the golf example above, if, say, there is a greater availability of

⁴² Lehmann Report at ¶ 129.

⁴³ Lehmann Report at ¶ 129.

⁴⁴ As I note elsewhere in this report (*see* ¶ 44 below) my stepdown percentages are estimated in groups based on the number of coaches allowed by the current NCAA Division I bylaws. This decision was driven in part by the availability of data for individual sports and the fact that the NCAA grouped those sports together in assessing the number of allowed coaches. As I have received and processed additional data, I have tested whether stepdowns estimated on individual sports would be statistically significantly different from those estimated for each coaching restriction group size. As described in Section V below, I find that they are not statistically significantly different. When I perform analyses for my damages report, I will again assess whether on the increased data I expect to be available at that time a grouped sport or individual sport analysis is appropriate. In either case both the data and the methodology are common to the class.

“alternative coaching opportunities” for swim coaches in Texas relative to swim coaches in Alabama, and this manifests in higher compensation for Texas-based Division I swim coaches than Alabama-based Division I swim coaches, then this dynamic would likewise lead my proposed damages model to estimate higher compensation for class members who coached swimming in Texas than for class members who coached swimming in Alabama. In short, my model accounts for precisely the factors that Dr. Lehmann believes that it should.

26. Dr. Lehmann also grossly miscategorizes my proposed method of calculating damages for programs that did not have the maximum number of unrestricted coaches during the conspiracy period. She describes it as “especially problematic” that my damages model “incorrectly treats those programs” which did not hire the maximum number of unrestricted coaches in the conspiracy period “the same as those that hired the maximum number of paid coaches during the proposed Class period.”⁴⁵ This is simply not true. As described in my original report, my proposed damages method includes taking the “compensation of the lowest-paid coach and apply[ing] one or more stepdowns to yield a conservative estimate of but-for pay for the volunteer coach.”⁴⁶ In my original report, I provide an estimate of but-for pay for a hypothetical volunteer swim coach subject to such a “double stepdown” when calculating but-for pay.⁴⁷ It is factually incorrect to say that my proposed damages method treats class members at programs with fewer coaches than the NCAA’s coach caps “the same” as those programs that hired the maximum allowable number of coaches under the rules in place during the conspiracy period.

⁴⁵ Lehmann Report at ¶ 140.

⁴⁶ Ashenfelter Report at ¶ 71, second bullet.

⁴⁷ Ashenfelter Report at ¶ 71, second bullet.

27. The NCAA has additionally suggested that because I controlled for the “employee-specific variables” of employees in a previous wage fixing case, it is inappropriate that I did not do so here.⁴⁸ By far the most important “employee-specific variable” that I used in that case were individual employer-employee-specific “fixed effects.” The term “fixed effects” refers to a series of indicator variables for each individual that take the value of 1 for that individual and 0 for all other individuals. These have the effect of taking account of how everything that remains constant about an individual over time affects the outcome of interest, which here would be compensation. However, the use of individual fixed effects for each coach subject to the Volunteer Coach Rule is not possible in this case, because the Volunteer Coach Rule itself did not permit for any variation in the pay of class members. All class members were unpaid under the Volunteer Coach Rule, and thus their pay could not and did not vary. Using individual fixed effects requires variation in the “dependent” or outcome variable, which here is compensation. The intent and effect of the Volunteer Coach Rule was to remove all variation in compensation across all individuals and fix their wages at a common level: \$0. Because of this uniform wage paid (or rather, not paid) to all class members, it would be impossible to structure a pay analysis in the same manner as I did in the previous antitrust wage-fixing case mentioned by counsel for the Defendants.

28. Dr. Lehmann also argues that my model does a poor job of predicting compensation generally, referencing graphical representations of the dispersion in predicted salaries and salary stepdowns in her Exhibits 10 and 12 in the first year after the end of the alleged conspiracy. This argument is erroneous for at least two reasons. First, the purpose of my

⁴⁸ Defendant NCAA’s Notice of Motion and Motion to Exclude Expert Testimony of Dr. Orley Ashenfelter and Dr. Daniel Rascher on Class Certification; Memorandum of Points and Authorities in Support Thereof (“Defendant’s Motion to Exclude”) at 1-2.

model is not to estimate the compensation of the lowest paid assistant coaches in the first year following the end of the conspiracy (which is what is depicted in Dr. Lehmann's Exhibit 10), but rather to estimate the pay that class members would have received during the conspiracy period, had the restraint on compensation never existed. Secondly, it is not surprising that predicted salaries would be different from the observed salaries. That is true of every regression model. Rather, the question is whether my method produces reasonable estimates of but-for salaries, which it does. Additionally, I note that taken across all observations within a group, the total prediction errors are generally small in magnitude: the overall difference between predicted pay and actual pay represents approximately 2.8% of actual pay among women's volleyball coaches, approximately 5.6% for softball coaches; and approximately 2% for women's tennis coaches. Men's soccer has the largest overall difference, at approximately 20.7% of total actual compensation, but I note that this difference reflects an *underestimate* of pay for these coaches.

29. As a visual illustration of the problem with Dr. Lehmann's interpretation of Exhibit 10, in particular, I have shown in Figure 1 what such a scatter plot looks like for a standard wage regression. The data shown is taken from an exemplary wage regression in a prominent econometrics textbook.⁴⁹ The model used to predict wages implements the technique James Heckman pioneered for correcting sample selection bias, work which Dr. Lehmann cited

⁴⁹ Wooldridge, Jeffrey (2013) *Introductory Econometrics*, South-Western Cengage Learning, 5th edition at pp. 619-620 Example 17.5, "Wage Offer Equation for Married Women." As the textbook puts it, "The wage offer equation is standard, with $\log(\text{wage})$ as the dependent variable and *educ*, *exper*, and *exper2* as the explanatory variables. In order to test and correct for sample selection bias—due to unobservability of the wage offer for nonworking women—we need to estimate a probit model for labor force participation. In addition to the education and experience variables, we include ... other income, age, number of young children, and number of older children." The data used in the example are from the 1975 Panel Study of Income Dynamics, the dataset used in Mroz, T. (1987). The Sensitivity of an Empirical Model of Married Women's Hours of Work to Economic and Statistical Assumptions. *Econometrica*, 55(4), 765-99.

favorably.⁵⁰ Figure 1 uses the approach of Dr. Lehmann’s Exhibit 10 to display the results of this standard wage regression for a subset of the sample, women 45 years old.⁵¹ Note first the apparent negative relationship in this scatterplot (the trend downward to the right), which it shares in common with Dr. Lehmann’s Exhibit 10 plots. This is an artifact of Dr. Lehmann’s unconventional choice of axes, which will tend to show a negative relationship regardless of model, by design.⁵² Second, Figure 1 illustrates that this textbook wage regression implementing a technique Dr. Lehmann endorses makes some large prediction errors, as models of real-world earnings data tend to do. As Dr. Lehmann might put it, this model estimates that one woman would receive approximately \$4.71 per hour (in 1975) when she actually only earned \$0.38 per hour. Similarly, this textbook earnings regression predicts that a different woman would earn \$3.58 per hour, yet she actually received approximately \$6. Such discrepancies, contrary to Dr. Lehmann, do not necessarily indicate a problem with the model, and Dr. Lehmann is mistaken to conclude on a similar basis that “Empirical evidence suggests [my] model is flawed...”⁵³

⁵⁰ Lehmann Report at ¶ 137.

⁵¹ In my backup, I include similar plots for ages 34, 43, and 46, having selected the ages (34, 43, 45, and 46) for which there are the most wage observations, following Dr. Lehmann’s approach for selecting which sports to display in her Exhibit 10.

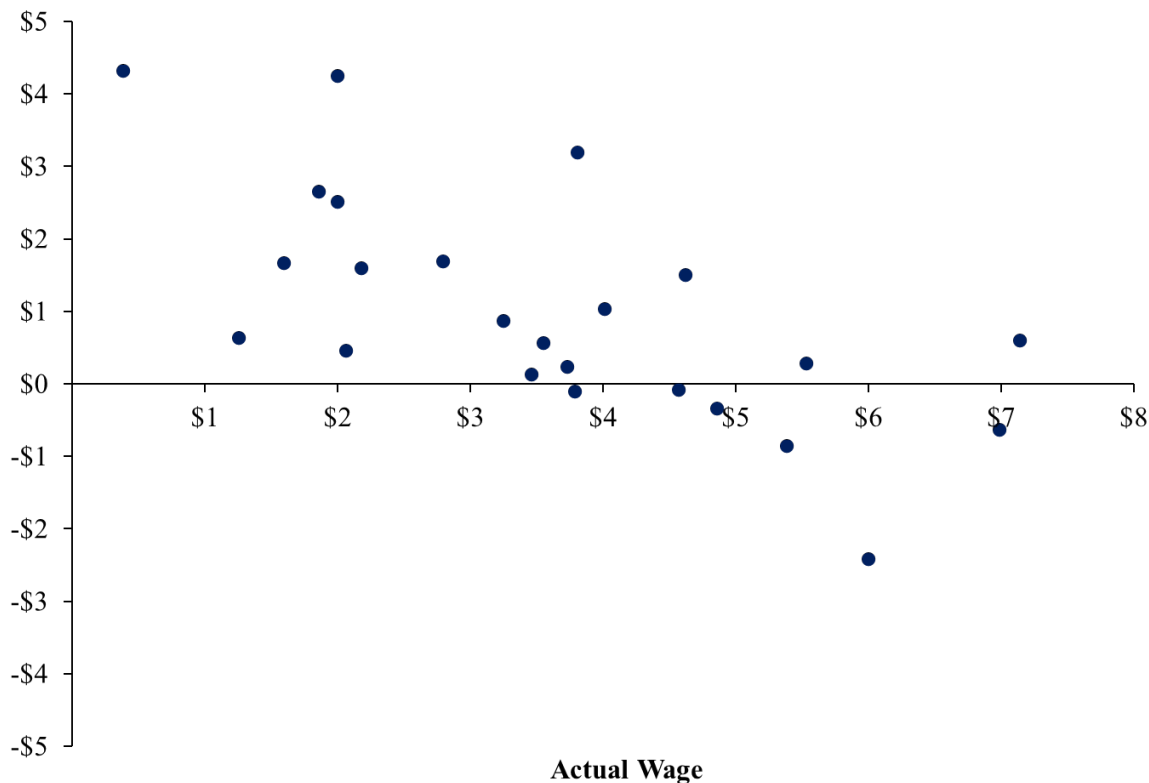
⁵² “It is a mistake to attempt to find defective regressions by a plot of residuals e_i versus observations Y_i as this will always show a slope.” (Draper, N.R. & Smith, Harry (1998). *Applied Regression Analysis*. McGraw-Hill, Inc., 3rd edition,

⁵³ Lehmann Report at ¶ 124.

Figure 1

Textbook Wage Regression Presented in the Manner of Dr. Lehmann's Exhibit 10
Women Age 45, in 1975

**Difference Between
Predicted and Actual Wage**



Notes: This analysis illustrates the differences between predicted and actual wages for women in the workforce in 1975. The data and regression specification are from Example 17.5 in Jeffrey Wooldridge's *Introductory Econometrics*, 5e. See fn 49 above.

30. Dr. Lehmann's Exhibit 12 presents a chart depicting the range of stepdown percentages for each program in four sports (women's softball, women's volleyball, men's soccer, and women's tennis). Dr. Lehmann concludes that because the relationship between the lowest- and second-lowest paid coach within each department is not uniform, my analysis is not reliable. Dr. Lehmann does not provide a standard against which she bases this judgment.

31. Taking the first of Dr. Lehmann's charts as an example, this graph shows that roughly half of softball programs (16 out of 33 programs) in this analysis had a stepdown from

their second-lowest to lowest paid coach that was within +/-10 percentage points of the estimated stepdown from my regression model.⁵⁴ Further, it shows that most programs (19 of 33, or 58%) had smaller stepdowns (which in turn translate to higher relative pay for the lowest-paid coach) than my model estimated.⁵⁵

IV. Including Age as a Regressor

32. Dr. Lehmann levels a specific criticism that I did not adequately control for differences in human capital among coaches.⁵⁶ Counsel for the Defendant has focused this criticism on controlling for differences in age among coaches, citing specifically to the damages analysis from Dr. Tollison in the NCAA Restricted Earnings Coach case.⁵⁷ I understand that this damages model was accepted by the Court over a challenge by the Defendant in that case.

33. Controlling for age in a typical econometric analysis of compensation is not done because we care about a worker's age *per se*, but rather because it is a proxy for worker experience, which is often unobservable to the econometrician.⁵⁸ I note that the model as presented in my original report already includes a proxy for worker experience: by arranging the compensation from highest to lowest within each program, my model accounts for differences in

⁵⁴ My regression model estimated a 50.5% stepdown for the group of sports that includes softball.

⁵⁵ Similarly, for women's volleyball (Lehmann Exhibit 12B), 11 out of 19 (58%) of programs had smaller stepdowns than estimated by my model. For men's soccer, (Lehmann Exhibit 12C), 11 out of 16 (69%) of programs had smaller stepdowns than estimated by my model. For women's tennis (Lehmann Exhibit 12D), 9 out of 13 programs (69%) of programs had smaller stepdowns than estimated by my model.

⁵⁶ Lehmann Report at ¶ 132. "Human capital" refers to useful skills and knowledge, often acquired by investment in areas such as education, health, and on-the-job training. *See* Schultz, Theodore W., "Investment in Human Capital," *American Economic Review* 51, no. 1 (March 1960): 1-17.

⁵⁷ Defendant's Motion to Exclude at 14-15.

⁵⁸ Noting that data sources often do not include actual labor force experience, "a transformation of the worker's age was used as a proxy for his experience." Willis, Robert J. 1986. "Wage Determinants: A Survey and Reinterpretation of Human Capital Earnings Functions." In *Handbook of Labor Economics*, vol. 1, edited by Orley Ashenfelter and Richard Layard. New York: North-Holland, at p. 526.

factors that affect compensation, including but not limited to variation in coaches' experience and skills. By arranging the coaches according to their compensation in this manner, my model assigns each class member to the lowest-paid positions within each program. I would expect that the lowest-paid positions are those that require the least experience. It is likely that the coaches filling those positions either have low experience (relative to other coaches in their program) or are less skilled than other coaches in their program. My model does not, in fact, assume that class members are "average" coaches, but rather treats each class member as one of the least-experienced members of his or her program.

34. Additionally, Dr. Lehmann asserts that the "expanded" coaches in paid positions in the post-conspiracy period may be more experienced and better qualified than the class members who were subject to the Volunteer Coach Rule during the conspiracy period and therefore may have commanded a higher salary than the class members would have in the absence of the alleged conspiracy.⁵⁹ This claim is not borne out by the evidence.

35. Data on the ages of coaches suggests that insofar as age is a proxy for experience, volunteer coaches were often more experienced than "expanded" coaches—*i.e.* those individuals who hold the lowest-paid positions among programs that expanded their paid coaching staff in the post-conspiracy period. In Table 2 below, I present an analysis of the average (mean) age of coaches subject to the volunteer coach rule, and of "expanded" coaches. This analysis shows that within most restriction groups, including the largest two restriction groups, and among all groups collectively, coaches subject to the volunteer rule were actually older, on average, than the "expanded" coaches in the post-conduct period. Insofar as age is a proxy for experience, there is

⁵⁹ Lehmann Report at ¶ 141.

no evidence that “expanded coaches” are generally more experienced than coaches subject to the Volunteer Coach Rule. Indeed, the data suggest the opposite.

Table 2: Comparison of Coach Ages

Restriction	Mean Age of Volunteer Coaches (2019-2023)	Mean Age of Expanded Coaches (2023-2024)
3	36.1	30.9
4	32.5	31.8
5	32.2	38.6
6	35.3	33.0
7	33.1	30.1
8	31.8	35.6
12	31.6	30.6
13	32.8	31.8
Overall	33.2	32.1

A. Adding Coach Age to Stepdown Regression

36. In my original report, I did not include controls for each coach’s age, partially because of data availability issues. However, having processed additional schools, I believe that I now have adequate data to do so. In particular, I have age data on 90.7% of compensated coaches in the post-conspiracy period, and on 56.3% of class members during the conspiracy period.⁶⁰ These data allow me to assess whether adding a control for the age of each coach improves my regression model.

37. Based on my assessment of the current data, I have added each coach’s age to my regression analysis. This analysis is otherwise identical to that presented in my original report.⁶¹

⁶⁰ I understand that counsel for the Plaintiffs are engaged in a follow-up process with NCAA Division I member schools to attempt to increase these numbers to the extent possible.

⁶¹ See Ashenfelter Report at ¶¶ 66-69 for details.

In particular, because the effect of age on pay is generally understood to be nonlinear (increasing relatively rapidly during a worker's younger years, then growing more slowly as he or she ages), I include both a linear age term (simply the coach's age) and a quadratic age term (the coach's age, squared).

38. Table 3 presents the results of this analysis. The first panel of Table 3 presents my original model, as described in my original report (that is, it does not include age controls). This Table differs from Table 5 of my original report because I have received and processed data from additional NCAA Division I member schools, and this is based on these updated data. These results are similar to those reported in my original report.⁶² The second panel of Table 3 presents the same analysis as in my original report, but the data set excludes those coaches for whom we do not observe age data, or for whom the age is implausible.⁶³ The purpose of this step is to identify whether any differences in results from adding age controls are a result of differences in the composition of coaches for whom I have received age data, rather than from controlling for age directly.⁶⁴ This panel shows very similar results to those from the top panel, indicating that there is not a substantial difference between those coaches for whom I have age data and those for whom I do not. Finally, the third panel of Table 3 presents the results of my regression analysis, including each coach's age. This panel can be read in a similar fashion as the previous

⁶² I note that the coefficient associated with a post-period restriction of nine coaches is no longer presented in this table. This is because of my refinements around the number of coaches allowed in women's rowing. (See fn 27, above). In my original report, women's rowing was the only sport in the group of sports allowing nine coaches; in this report, women's rowing is now the only sport in the group of sports allowing seven coaches.

⁶³ I consider a date of birth implausible when it implies the coach is under 20 years of age, or over 100. This step drops approximately 138 observations.

⁶⁴ In order to be in a regression analysis, each observation (here, coach) must have data on all variables included in the regression. When I include age as a control variable, coaches for whom age is missing will automatically be excluded from my regression analysis.

two, but additionally reports the coefficients and their associated t-statistics for the effect of each coach's age and age squared. The coefficient on age is positive, while the coefficient on age squared is small and negative, indicating that compensation generally increases with a worker's age up to a certain point, before eventually beginning to decrease. Both of these coefficients are statistically significant. With the exception of the six- and eight-coach cap groupings, the estimated stepdown coefficients are slightly smaller than those from the second panel (indicating that, when applied to the estimate of but-for pay described in the following section, if a volunteer and the corresponding reference coaches were the same age, including age in the model would lead to slightly higher estimated pay for the volunteer), though these differences are generally small in both directions.⁶⁵

39. While the coefficients on age are statistically significant, overall age plays a relatively small factor in estimating compensation for the lowest-paid workers. The act of rank-ordering coaches according to their compensation accounts for much of the differences in experience across coaches, and my model has always treated (and continues to treat) volunteer coaches as the lowest-paid, presumably lowest-experience coaches within each program. While I believe that it is appropriate to include age controls, I do not believe that the model described in my original report was inadequate in not doing so.

⁶⁵ I note that the stepdown percentages reported in Panel 3 of Table 3 reflect only the group-specific coefficients on "rank" in my model. They do not generally show the full impact of age on a particular individual's step-down estimate, since that impact varies across individuals. However, they do show how the inclusion of age in my regression impacts the rank coefficients themselves.

Table 3
Regression Results

Panel 1: Original Model

Post-Period Restriction	Regression coefficient, for sports with given restriction (in post-period)	T-Statistic	Percentage Stepdown	Unique Programs in Restriction Group	Adjusted R2	N
3	-0.697	4.79	-50%	64	0.383	1,908
4	-0.685	9.74	-50%	234		
5	-0.872	3.58	-58%	19		
6	-0.812	2.52	-56%	15		
7	-0.291	1.29	-25%	18		
8	-0.272	0.86	-24%	13		
12	-0.720	2.38	-51%	16		
13	-0.522	1.43	-41%	24		

Panel 2: Original Model, excluding observations with missing or implausible age.

Post-Period Restriction	Regression coefficient, for sports with given restriction (in post-period)	T-Statistic	Percentage Stepdown	Unique Programs in Restriction Group	Adjusted R2	N
3	-0.646	4.23	-48%	60	0.377	1,770
4	-0.672	9.15	-49%	215		
5	-0.872	3.55	-58%	19		
6	-0.756	2.23	-53%	14		
7	-0.289	1.24	-25%	17		
8	-0.270	0.74	-24%	11		
12	-0.733	2.36	-52%	16		
13	-0.507	1.30	-40%	22		

Panel 3: Model controlling for age and age-squared, in addition to original model controls

Post-Period Restriction	Regression coefficient, for sports with given restriction (in post-period)	T-Statistic	Percentage Stepdown	Unique Programs in Restriction Group	Coef. on Age	T-Statistic	Coef. on Age-Squared	T-Statistic	Adjusted R2	N
3	-0.556	3.83	-43%	60	0.082	6.44	-0.001	-5.65	0.397	1,770
4	-0.613	8.21	-46%	215						
5	-0.847	3.46	-57%	19						
6	-0.766	2.33	-53%	14						
7	-0.197	0.81	-18%	17						
8	-0.283	0.74	-25%	11						
12	-0.614	2.01	-46%	16						
13	-0.466	1.24	-37%	22						

Notes: Based on subpoena data. All models include indicator variables for each year (2023 or 2024), and an indicator for whether it is a combined program. The model presented in Panel 3 additionally includes each coach's age and age squared. The stepdown is estimated separately for each post-period restriction size, estimated in a single model.

B. Adding Age to the Estimate of Volunteer Coach But-For Pay

40. In this section, I describe a process for estimating volunteer coach but-for pay during the conspiracy period, with the inclusion of age. This process is similar to that described in my original report.⁶⁶

41. In order to calculate the estimated but-for compensation of class members, the “stepdown method” takes the compensation actually paid by the lowest-earning coach within each program as a starting point. As explained in Section IV.A above, I use the actual earnings of compensated coaches as a baseline from which to estimate each class member’s compensation but-for the NCAA’s rule fixing their compensation at \$0. The expected difference in salary between any two ranks is determined by the group-specific coefficients on rank in my regression. Using these coefficients, I can translate the pay of the “reference coach” (the lowest paid countable coach in a program-year that has a volunteer coach) to the pay of an “expanded rank” coach, which corresponds to the rank a volunteer coach would have been expected to occupy, but-for the rule preventing them from being paid. Insofar as the reference coach and the corresponding class member have different ages, I use the age coefficients in my model to further adjust for the expected pay difference between those two ages. In other words, my model coefficients imply a rank-adjustment factor that is common to all class coaches in a given restriction group, as well as an age-adjustment factor that is particular to each class member. The stepdown percentage required for estimating but-for pay is a function of both adjustment factors.

42. As of the date of this report, I have age data for approximately 56% of class members, though as described in fn 60 above, I understand that counsel for the Plaintiffs are working on improving this percentage. Accordingly, I propose two methods for estimating but-

⁶⁶ See Ashenfelter Report at ¶¶ 70-71.

for compensation for class members: one which uses the coach's actual age if known, and an alternative method that uses the average age of volunteer coaches in the same restriction group for those class members whose age is unavailable to me.⁶⁷

- If the age of both the volunteer coach and reference coach are known, my method would use this information directly. For instance, imagine that during the class period, a women's volleyball team's lowest-paid unrestricted coach (the "reference coach") was 40 years old and earned \$60,000 per year, while in the same year the same program employed a class member who was 35 years old and earned \$0. Accounting for the stepdown for a program with a post-conspiracy restriction of four coaches and the typical difference in pay between a 40 year old and a 35 year old, as implied by the age coefficients in my regression, the relevant stepdown for this hypothetical class member is 51.1%.⁶⁸ Applying this stepdown to the reference coach pay implies a but-for compensation for this class

⁶⁷ Since adjustments for volunteer age also depend on the age of corresponding reference coach, I likewise propose using the actual age of the reference coaches where available, and otherwise using the mean value of reference coaches in the same restriction group. The method described in this paragraph also still allows me to take a similar "double stepdown" in the case where a school has less than a full complement of coaches earning a non-zero compensation (other than the class member), as described in ¶ 71 of my original report. Lastly, I propose imposing a requirement that the estimated but-for pay of any class member cannot exceed that of the reference coach.

⁶⁸ This is calculated as (Rank Factor)*(Volunteer Age Factor)/(Reference Coach Age Factor)-1, where:
 (Rank Factor) = $e^{(\text{rank_coefficient})}$; here this is Rank Factor $\approx e^{(-0.613)} \approx 0.54$
 (Volunteer Age Factor) = $e^{(\text{age_coefficient}*\text{volunteer_age}+\text{age_squared_coefficient}*\text{volunteer_age}^2)}$;
 here this is Volunteer Age Factor $\approx e^{(0.082*35-0.001*1225)} \approx 1.86$
 (Reference Coach Age Factor) =
 $e^{(\text{age_coefficient}*\text{reference_age}+\text{age_squared_coefficient}*\text{reference_age}^2)}$; here this is Reference
 Coach Age Factor $\approx e^{(0.082*40-0.001*1600)} \approx 1.96$

member of \$29,341. The difference between these estimated but-for earnings and the actual volunteer coach earnings (\$0) is damages for that class member.

- If, in the above situation, the age of the class member were unknown but every other factor was the same, I could reasonably assume that the class member in this program was the same age as the average age of a volunteer coach in the same restriction group, namely 33. Accounting for the stepdown for a program with a post-conspiracy restriction of four coaches and the typical difference in pay between a 40 year old and a 33 year old, as implied by the age coefficients in my regression, the relevant stepdown for this hypothetical class member is 53.6%.⁶⁹ Applying this stepdown to the reference coach pay implies a but-for compensation for this class member of \$27,846. The difference between these estimated but-for earnings and the actual volunteer coach earnings (\$0) is damages for that class member.

V. Estimating step-downs by coach cap size

43. Dr. Lehmann argues that my “damages methodology incorrectly combines data from multiple sports without any basis to assume that supply and demand dynamics are the same

⁶⁹ This is calculated in the same manner as described in fn 68 above. Using the numbers in this example, Rank Factor $\approx e^{(-0.613)} \approx 0.54$

Volunteer Age Factor $\approx e^{(0.082*33-0.001*1225)} \approx 1.81$

Reference Coach Age Factor $\approx e^{(0.082*40-0.001*1600)} \approx 1.96$

across sports or correlated.”⁷⁰ She then presents a table, Exhibit 11, which she argues shows that there are “large differences between the two sets of results” (the “two sets of results” being stepdown estimates based on individual sports versus stepdown estimates based on the total coach cap sizes.)⁷¹

44. First, as I testified at my deposition, these are not arbitrary groupings: I grouped sports according to the size of the coaching staff allowed by NCAA rules.⁷² The NCAA and its member schools decided that these are appropriate coaching staff sizes for each sport, and that the sports within each category are sufficiently similar in terms of demand for coaching services to justify allowing them the same number of coaches. Using the same staff-size categories as the NCAA and its member colleges controls for any differences across sports that warrant different coaching staff-size limits while allowing me to leverage larger sample sizes to estimate more statistically reliable results.

45. Second, though Dr. Lehmann describes her Exhibit 11 as “show[ing] large differences,” it is a testable proposition whether or not the coefficients within each group are statistically significantly different from one another—a test that Dr. Lehmann did not perform.⁷³ I have performed this analysis, and present the results in Table 4. Each row of Table 4 presents the results of an F-test of equality of the stepdown coefficient across sports, within a restriction group. Column [1] presents the F-statistic for the test. Column [2] presents the associated p-value. A p-value smaller than 0.05 would indicate that the stepdown coefficients for each sport within a restriction group, estimated separately, are jointly different from each other to a

⁷⁰ Lehmann Report at ¶ 127.

⁷¹ Lehmann Report at ¶ 128.

⁷² Ashenfelter Deposition at 48:4-15.

⁷³ Lehmann Deposition At 80:17-19

statistically significant degree. For each of the restriction groups, the differences are *not* statistically significantly different, indicating that any differences among these coefficients are plausibly due to chance, and therefore one cannot conclude that there are systematic differences in stepdown coefficients among the relevant sports.⁷⁴

Table 4:

F-Tests Regarding Aggregation of Sports, Original Report Model and Data

Regression Sample	F-Stat for Equal Rank-2 Coefficients	P-value	Regression Degrees of Freedom	Regression N	Programs in Regression
Sports with Post-Period Coach Cap of 3	0.8	0.561	1,385	1,522	332
Sports with Post-Period Coach Cap of 4	1.0	0.437			
Sports with Post-Period Coach Cap of 5	0.7	0.505			
Sports with Post-Period Coach Cap of 6	0.9	0.461			
Sports with Post-Period Coach Cap of 8	0.2	0.671			

Note: Model is estimated across all post-period restriction groups, including “single sport groups” (e.g. FCS football), where there is only one sport within each restriction group present in my data. This analysis is based on the data and analysis reported in my original report, and the Lehmann Report at Exhibit 11.

46. The analysis presented in Table 4 is based on the data and analysis underlying my original report. In order to confirm that it is still true that the stepdown coefficients within each coach cap grouping are not statistically significantly different from one another when I use updated data and include coaches’ ages as described in Section IV.A above, I also present a version of this analysis based on these updated data and analysis. These results are presented in Table 5. This table is similar and can be read in a similar fashion as Table 4. This analysis excludes those sports which have fewer than five unique programs, since the F-test may be unreliable when it includes coefficients that are determined by very few observations. Similar to

⁷⁴ Additionally, I note that she does not present results for programs with a coach cap of 9 or greater “because there is only one sport in each of these restrictions. Therefore, a sport-specific stepdown would be identical to Dr. Ashenfelter’s estimate.” (Lehmann Report at Exhibit 11, Note 3).

Table 4, this analysis shows that for each of the restriction groups, estimating separate stepdown coefficients for each sport within that restriction group yields stepdown coefficients that are not statistically significantly different from one another.

Table 5:

F-Tests Regarding Aggregation of Sports, Current Model & Data.

Regression Sample	F-Stat for Equal Rank-2 Coefficients, Across Sports (Pooled R-Groups, Inc. SSGs)	P-value	Regression Degrees of Freedom	Regression N	Programs in Regression
Sports with Post-Period Coach Cap of 3	1.0	0.427			
Sports with Post-Period Coach Cap of 4	0.5	0.871	1,577	1,685	355
Sports with Post-Period Coach Cap of 8	0.0	0.888			

Note: This excludes sports for which I have data on fewer than 5 unique programs. I note that after this exclusion, sports with post-period restriction caps of five or six coaches become single-sport groups (Women's Swimming & Diving and Women's Track & Field and Cross Country, respectively) and are therefore not presented in this table. This model is estimated across all post-period restriction groups, including "single sport groups" (e.g. FCS football), where there is only one sport within each restriction group present in my data. This analysis is based on my current data and the updated version of my model that includes age.

47. Because the stepdowns for each individual sport are similar to the stepdowns for other sports within the same coach cap group, there is no statistical evidence that it is necessary to estimate separate stepdowns for each sport, despite Dr. Lehmann's assertions to the contrary. Indeed, because some sports are relatively uncommon, estimating a single-sport specific stepdown would mean estimating a statistical relationship based on a small number of observations, perhaps as few as from a single program.⁷⁵ Because there is no statistical evidence that these stepdowns significantly vary by sport within coach cap size groupings, and because

⁷⁵ For example, the only program for men's gymnastics included in my regression analysis in Table 3 is at The Ohio State University, with a single year of data. Therefore, estimating a separate stepdown percentage for men's gymnastics would mean the estimated but-for pay for all men's gymnastics volunteers would be largely determined by this one program.

there are econometric and statistical reasons *not* to estimate these stepdowns separately by sport, I will not do so.⁷⁶

VI. Additional Criticisms

48. In this section, I address some of the other criticisms made by Dr. Lehmann and counsel for the NCAA.

A. Benefits and Income from Employment in Non-Class Positions

49. Dr. Lehmann argues that it is necessary to account for benefits received by volunteer coaches, “[t]o the extent that a proposed Class member would not have earned these benefits in the but-for world.”⁷⁷ However, Dr. Lehmann does not identify any such benefits that were available in the real world that would not be available in the absence of the volunteer coach rule. For instance, she identifies “free coaching from the university’s coaching staff, access to track and weight room facilities, physical therapy, and chiropractic services because of her coaching position.”⁷⁸ These are identified as being benefits associated with “a coach” and are not identified as being specifically tied to her volunteer coach position. Indeed, the coach whose testimony Dr. Lehmann is quoting testified that “paid personnel at ASU [had] equal access to use the track and gym.”⁷⁹ Additionally, the Volunteer Coach rule stipulated that Volunteer Coaches could not receive “compensation or remuneration” beyond limited tickets to home athletics events, complementary meals in conjunction with organized team activities (but excluding

⁷⁶ I understand that counsel for the Plaintiffs have subpoenaed NCAA Division I member schools for updated data covering the 2024-25 academic year and have requested updated MFRS data for the 2023-24 academic year. If and when I receive these data, I will update my analyses, including a review of whether I believe it is appropriate to estimate stepdowns separately by sport.

⁷⁷ Lehmann Report at ¶ 103.

⁷⁸ Lehmann Report at ¶ 66.

⁷⁹ Deposition of Shannon Ray, October 15, 2024 at 217:15-18.

“training table” meals), and “reasonable entertainment” (but not cash for such entertainment) “in conjunction with entertainment provided to student-athletes.”⁸⁰

50. Similarly, Dr. Lehmann referenced monetary compensation that coaches subject to the Volunteer Coach Rule “may not” have been able to receive had the position been paid. This refers to individuals who receive compensation for work other than their job as a coach, such as working at summer camps and clinics, private instruction to individuals other than the athletes on their teams, and other part-time work at the universities at which they worked. I do not find this information relevant to my calculations for several reasons. First, I note that NCAA Bylaws allow for athletics staff members—paid or unpaid—to work at camps.⁸¹ Additionally, volunteer coaches were prevented from receiving compensation for any work in the athletics department.⁸² More broadly, any such monetary compensation received by class members was for work performed that was separate from the work any coach performed in their role as a coach for their NCAA Division I team. Any compensation earned for working a separate job does not “offset” harm from being underpaid for work as a coach.

51. Dr. Lehmann presents evidence of Class members receiving varying compensation for teaching at camps. It is not surprising or inappropriate that some class members choose to work more hours as camp staff or to take on coaching positions outside of Division I. These are, fundamentally, second jobs that class members (and other coaches) are working in addition to their Division I coaching jobs. It is not surprising that individuals who earn \$0 for their Division

⁸⁰ NCAA_SMART-COLON_0000001 (2020-21 NCAA Division I Manual) at 11.01.6.

⁸¹ NCAA_SMART-COLON_0000001 (2020-21 NCAA Division I Manual) at 13.12.2.3

⁸² *See for instance* NCAA_SMART-COLON_0028382 (a men’s wrestling volunteer coach received compensation in his capacity as a graduate assistant for the convocation center, which is operated by the athletics department. The NCAA recommended that the volunteer coach be suspended.)

I coaching job may choose to work more hours at a second job—or be more likely to take a second job at all—than coaches who receive nonzero compensation for their Division I coaching duties.

B. Sample Selection Bias.

52. Dr. Lehmann asserts that my damages model suffers from sample selection bias because it is based on the schools which had expanded their paid coaching staffs beyond the 2022-23 coaching caps immediately upon the rescission of the Volunteer Coach Rule.⁸³

53. Dr. Lehmann asserts that programs that are more highly-valued are more likely to expand, thus more likely to be in our analysis. Dr. Lehmann has provided no evidence that even if schools that expanded their paid coaching staff in the first year possible did indeed value coaching more, this would translate to differences in pay *differentials* instead of just levels.⁸⁴ In other words, while schools that place more value on certain programs may pay higher salaries, Dr. Lehmann has provided no evidence that they would also have different *stepdowns* among their coaches. Because my model uses school-sport-year specific compensation as a starting point for estimating each class member's but-for pay, my method accounts for any potential differences in the value placed on programs by various schools.

54. Additionally, I note that I did not sample a subset of NCAA member schools. Counsel for the Plaintiffs sent subpoenas to 395 colleges and universities, most of which (over 330) have responded. My model incorporates the data provided by all schools that responded to

⁸³ See Lehmann Report at ¶¶ 137-142.

⁸⁴ In fact, Dr. Lehmann has presented no evidence that schools that expanded their paid coaching staffs paid higher conspiracy-era compensation than programs that did not. It is not obvious that a more highly-valued program will be quicker to hire and pay. For instance, if a program is hiring for a higher-paid coaching position, it may be more deliberate in its hiring than for a lower paid position. And the more the program wants to spend on a new coaching position, the more the program or school will need to adjust its budget to do so.

these subpoenas and expanded their paid coaching staff in the post-conspiracy period, not a sample of these schools. As described in Section III.C of my original report, I do not expect the effect of ending this rule to be immediate, and I do not believe that the market had reached its non-collusive equilibrium within the first academic year following the end of the conspiracy period.

C. All or Nearly All Class Members were Affected by the Conspiracy.

55. Dr. Lehmann disagrees with my conclusion that all or nearly all members of the class were harmed by the NCAA's rules preventing them from being compensated for their work, which is based on my conclusion that absent a rule preventing compensation of these workers, the market rate for their labor would be greater than zero.⁸⁵

56. In my original report, I showed that though the NCAA Division I bylaws did not (and do not) require that unrestricted coaches be compensated, over 99% of unrestricted coaches in the data I received from member schools did receive compensation during the class period.⁸⁶ This is evidence that in the absence of a rule preventing schools from compensating coaches, they do, in fact, compensate their coaches.

57. Dr. Lehmann argues that this analysis fails to consider the programs that have a volunteer coach, but do not have the maximum allowable number of unrestricted coaches.⁸⁷ I have considered these programs, but the existence of such programs does not change my opinion. If a program has fewer than the maximum number of unrestricted coaches, yet chooses to designate a coach as a "volunteer" rather than as an unrestricted coach (who, according to NCAA

⁸⁵ Lehmann Report at ¶ 115-119.

⁸⁶ Ashenfelter Report at ¶ 55.

⁸⁷ Lehmann Report at ¶ 116.

rules did not and do not need to be paid), it must be doing so for some purpose, as there were some restrictions on the allowable duties of volunteer coaches (namely, they were not allowed to participate in off-campus recruiting).⁸⁸ In addition to restricting the cash compensation paid to \$0, the NCAA's Volunteer Coach Rules also prevented schools from offering health insurance, tuition reimbursement, paying for most meals, and other expenses.⁸⁹

58. As an additional piece of evidence that, absent a rule preventing schools from paying coaches, they do, in fact pay them, I also briefly examine basketball. During the class period, basketball programs were subject to a cap of four unrestricted coaches, and were not allowed any additional coaches subject to the Volunteer Coach Rule. Concurrent with the repeal of the Volunteer Coach Rule, the maximum number of coaches allowed for each basketball team increased to 6.⁹⁰ The key difference between “expanded” coaches in basketball versus “expanded” coaches in the sports in which members of the class worked as coaches is that basketball never had volunteer coaches, does not have a history or experience of volunteer coaches, and so many of the issues of lingering effects on compensation do not apply to basketball programs. My analysis of basketball programs shows that every single basketball program that expanded their coaching staff after July 1, 2023 compensates all of their coaches.⁹¹ This is additional evidence that in the absence of a rule preventing compensating coaches,

⁸⁸ Dr. Lehmann conceded at her deposition that the bylaw preventing class members from receiving compensation “could have been” a factor in the class member not receiving compensation. *See* Lehmann Deposition at 72:15-73:2.

⁸⁹ Ashenfelter Report at ¶ 28, citing NCAA_SMART-COLON_0000001 at NCAA Bylaw 11.01.6 and Figure 11-1 “Coaches’ Compensation and Benefits”.

⁹⁰ NCAA_SMART-COLON_0001396 (2023-2024 NCAA Division I Manual) at Rule 11.7.5.

⁹¹ See my backup.

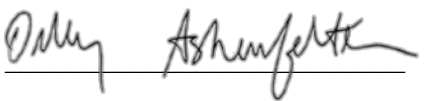
coaches get paid. Furthermore, it is evidence that absent a recent history of rules preventing coach compensation, coaches get paid.

VI. Conclusions

59. Nothing in Dr. Lehmann's report has changed my opinions, namely that there exists evidence common to the class that the alleged conspiracy suppressed class members' compensation generally, specifically at zero. I also find that the alleged conspiracy affected all or nearly all members of the class.

60. I also conclude that the NCAA Division I member schools had sufficient market power to suppress the compensation of the coaches that were subject to the Volunteer Coach Rule. I base this on my conclusion that the competitive wage for volunteer coach labor during the class period would have been greater than \$0 absent the alleged conspiracy.

61. I also conclude that there exists a reasonable methodology by which to estimate damages using data and methods that are common to the class.

A handwritten signature in cursive script, reading "Orley Ashenfelter", written over a horizontal line.

Orley Ashenfelter

January 31, 2025

APPENDIX A

Documents Relied Upon

Legal Filings

Colon v. NCAA, No. 1:23-cv-00425-WBS-KJ, Notice of Motion and Motion for Class Certification (ECF No. 85).

Colon v. NCAA, No. 1:23-cv-00425-WBS-KJ, Memorandum and Order re: Defendant's Motion to Transfer and Motion to Dismiss (ECF No. 38).

Colon v. NCAA, No. 1:23-cv-00425-WBS-KJ, Defendant NCAA's Notice of Motion and Motion to Exclude Expert Testimony of Dr. Orley Ashenfelter and Dr. Daniel Rascher on Class Certification; Memorandum of Points and Authorities in Support Thereof (ECF No. 95).

Expert Reports

Affidavit of Robert D. Tollison, *Law v. National Collegiate Athletic Ass'n*, No. 94-cv-2053.

Expert Report of Jee-Yeon K. Lehmann, Ph.D. December 20, 2024.

Report of Orley Ashenfelter in Connection with *Colon et al., v. National Collegiate Athletic Association*, Case No. 1:23-cv-00425-WBS, November 1, 2024, Corrected November 26, 2024

Deposition Testimony

Deposition of Jee-Yeon K. Lehmann, PhD., January 22, 2025

Deposition of Shannon Ray, October 15, 2024

Bates-Numbered and Other Party-Provided Documents

UF 006402

BigWest_00007787

NCAA_SMART-COLON_0028382

NCAAFIN_MFRS_SupplementalTool.xlsx

NCAA_SMART-COLON_0000001 (2020-21 NCAA Division I Manual)

NCAA_SMART-COLON_0001396 (2023-2024 NCAA Division I Manual)

Academic Literature & Textbooks

Draper, N.R. & Smith, Harry (1998). *Applied Regression Analysis*. McGraw-Hill, Inc., 3rd edition

Mroz, T. (1987). The Sensitivity of an Empirical Model of Married Women's Hours of Work to Economic and Statistical Assumptions. *Econometrica*, 55(4), 765-99.

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Willis, Robert J. 1986. "Wage Determinants: A Survey and Reinterpretation of Human Capital Earnings Functions." In *Handbook of Labor Economics*, vol. 1, edited by Orley Ashenfelter and Richard Layard. New York: North-Holland

Wooldridge, Jeffrey (2013) *Introductory Econometrics*, South-Western Cengage Learning, 5th edition.